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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,909	11/21/2003	Hiroataka Oomori	50395-239	7356
20277	7590	09/19/2005	EXAMINER	
MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			STAHL, MICHAEL J	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,909

Applicant(s)

OOMORI, HIROTAKE

Examiner

Mike Stahl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/5/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Drawings

Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Note [0018] and [0003]-[0004]. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Lines 5-6 of claim 1 contain the phrase: "transmitting signals between the semiconductor optical device". This is not clear because it raises the question, between the semiconductor optical device and what? It appears that an element has been omitted from this phrase. For the purpose of comparison with prior art in this Office action, it will be assumed that the phrase reads "between the semiconductor optical device and an electronic circuit". It is noted that claims 2-10 are rejected by virtue of their dependence from claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Shih (US 5845982).

Claim 1: Shih discloses an optical module (figs. 4-5) comprising: a semiconductor optical device **31**; a stem (regarded as the round cap with two holes and a semicircular wall in fig. 4) for providing the semiconductor optical device; plurality of lead terminals (two are shown in figs. 4-5 going through the holes in the stem) extending along a predetermined axis from the stem, the lead terminals transmitting signals between the semiconductor optical device and an electronic circuit (regarded as the external power supply, for example); a substrate **43** for providing an electronic circuit thereon; and a base **32** for mounting the substrate, wherein the base extends along the predetermined axis from the stem and the lead terminals are electrically and directly connected to the electronic circuit provided on the substrate **43**.

Claim 8: The semiconductor optical device **31** is a semiconductor laser diode.

Claim 9: The semiconductor optical device may alternatively be a photodiode (col. 3 lns. 27-35).

Claims 1-2 and 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Yonemura et al. (US 6540412).

Claim 1: Yonemura discloses an optical module **1** (figs. 2-3) comprising: a semiconductor optical device **49a**; a stem **43** for providing the semiconductor optical device; plurality of lead terminals **48** extending along a predetermined axis from the stem, the lead terminals transmitting signals between the semiconductor optical device and an electronic circuit; a substrate **47** for providing an electronic circuit thereon; and a base **60** for mounting the substrate, wherein the base extends along the predetermined axis from the stem and the lead terminals are electrically and directly connected to the electronic circuit provided on the substrate **47**.

Claim 2: The stem **43** and the base **60** are made of different materials (the stem is metal and the base is plastic – col. 9 lns. 39-40 and col. 6 lns. 40-41).

Claim 7: The lead terminals and the base sandwich the substrate therebetween.

Claim 8: In a related embodiment, the semiconductor optical device **23b** is a laser diode (fig. 6).

Claim 9: In the embodiment of fig. 3 mentioned above, the semiconductor optical device **49a** is a photodiode.

Claim 10: Turning back to the fig. 6 embodiment, the semiconductor optical device includes a laser diode **23b** and a photodiode **23c**. The optical module **1** constitutes an optical transceiver.

Allowable Subject Matter

Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the indefiniteness rejection above is overcome.

Claim 3 requires that the second material of the base, at an edge portion adjacent to the stem, contains the first material of the stem. This feature is not disclosed or suggested by the prior art of record. Yonemura is the only reference applied to parent claim 2. The base and stem as interpreted in that reference are made of metal and plastic respectively. There is no apparent motivation to make the plastic base include the same metal of which the stem is made. Claims 4 and 5 depend from claim 3.

Claim 6 requires that the stem and the base are made of the same material and are formed in unity. This limitation is not obvious in light of the Yonemura reference which uses different materials for the stem and the base. It is not clear whether the stem and base of the Shih reference are made of the same material; however, even assuming that they are, it is not considered obvious to make them as a single piece because of the way the other parts of the Shih module are assembled. In particular it appears that it would be more difficult to properly place the circuit board 43 and its associated lead terminals if the stem (the cap on the end opposite lens 42) and base 32 were integrally formed. In summary the prior art of record does not teach or suggest an optical module which combines all the limitations of claims 1 and 6.

As a supplemental comment, it is noted that the phrase "base extends along the predetermined axis from the stem" has not been interpreted in the above rejections as meaning that the base is actually in direct physical contact with the stem. The description of the invention

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supports such an interpretation at least at [0027] (“the base 20 extends continuously from the surface 22b of the stem 22”), and at [0032] (“heat generated by the semiconductor laser ... is transmitted to the base 20 via the stem 22”). It is noted that claim 1 would distinguish over the Yonemura reference if it was amended to emphasize that the base touches a surface of the stem. With regard to the Shih reference, it is noted that claim 1 presently recites “a substrate for providing *an* electronic circuit thereon”. If claim 1 was amended to overcome the indefiniteness rejection above, e.g. by inserting “and an electronic circuit” after “optical device” in line 6 (p. 10 ln. 7), and further amended by changing “an” to “the” in line 7 (p. 10 ln. 8), then this would distinguish over the Shih reference. This is because the lead terminals of Shih as interpreted in the above rejection transmit signals between the semiconductor optical device and an electronic circuit which is *outside* the module; they do not transmit signals between the semiconductor optical device and the circuit which is on substrate 43. Shih does not show any lead terminals originating from the semiconductor optical device itself which are electrically and directly connected to the circuit on substrate 43.

Conclusion

The additional references cited on the attached PTO-892 are relevant to various aspects of the present invention.

Inquiries about this letter should be directed to Mike Stahl at 571-272-2360. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official communications which are


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eligible for submission by facsimile and which pertain to this application may be faxed to 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJS

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September 13, 2005



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